Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) An apparatus for canceling an image signal from a received radio frequency signal, the apparatus comprising:

a ring oscillator for producing a radio frequency signal having in-phase and quadrature phase components, said ring oscillator including a plurality of delay cells, an output of each delay cell being coupled to an input of another delay cell, one of the couplings between delay cells being cross-coupled so that the output of one delay cell is inverted prior to input into another delay cell;

a first mixer having inputs configured to receive the in-phase component and the received radio frequency signal and outputting an in-phase signal;

a second mixer having inputs configured to receive the quadrature phase component and the received radio frequency signal and outputting a quadrature phase signal;

a phase shift device coupled with one of said mixers for receiving an output of said one mixer and outputting a phase shifted signal; and

a combiner, coupled to the other of said mixers and said phase shift device without a level shift or inverter circuit, for producing an image cancelled signal.

2. (Original) The apparatus of claim 1 wherein said phase shift device is coupled to said second mixer.

3. (Original) The apparatus of claim 2 wherein said phase shift device shifts a phase of said second mixer output by ninety degrees.

4. (Previously presented) The apparatus of claim 1 wherein said ring oscillator includes four delay cells.

5. (Previously presented) The apparatus of claim 1 wherein each delay cell delays its input by forty-five degrees.

6. (Original) The apparatus of claim 1 wherein said first mixer and said second mixer are Gilbert cells.

7. (Previously presented) A receiver for use in a wideband communication system, said receiver capable of canceling an image signal from a received radio frequency signal, said receiver comprising:

a ring oscillator for producing a radio frequency signal having in-phase and quadrature phase components, said ring oscillator including a plurality of delay

cells, an output of each delay cell being coupled to an input of another delay cell, one of the couplings between delay cells being cross-coupled so that the output of one delay cell is inverted prior to input into another delay cell;

first mixing means for mixing the in-phase component with the received radio frequency signal and outputting an in-phase signal;

second mixing means for mixing the quadrature phase component with the received radio frequency signal and outputting a quadrature phase signal;

shifting means for receiving one of said mixing means' phase signals and outputting a phase shifted signal; and

combining means for combining the phase shifted signal with the other phase signal to produce an image canceled signal, said combining means coupled to the other of said mixing means and said shifting means without a level shift or inverter circuit.

8. (Previously presented) The receiver of claim 7 wherein said shifting means shifts the one phase signal by ninety degrees in phase.

9. (Previously presented) The receiver of claim 7 wherein said ring oscillator includes four delay cells.

10. (Previously presented) The receiver of claim 7 wherein each delay cell delays its input by forty-five degrees.

11. (Previously presented) The receiver of claim 7 wherein said shifting means is coupled to said first mixing means.

12. (Previously presented) The receiver of claim 7 wherein said first and second mixing means includes a Gilbert cell.

13. (Previously presented) A method for canceling an image signal from a received radio frequency signal, comprising the steps of:

providing a ring oscillator including a plurality of delay cells, an output of each delay cell being coupled to an input of another delay cell, one of the couplings between delay cells being cross-coupled so that the output of one delay cell is inverted prior to input into another delay cell;

producing a radio frequency signal having in-phase and quadrature phase components with the ring oscillator;

mixing the in-phase component and the received radio frequency signal by an in-phase mixer to produce an in-phase signal;

mixing the quadrature phase component and the received radio frequency signal by a quadrature phase mixer to produce a quadrature phase signal;

shifting a phase of one of the mixed phase signals by a shifter to produce a phase shifted signal; and

combining the phase shifted signal with the other mixed phase signal by a combiner to produce an image canceled signal, wherein the combiner is coupled to the other mixer and the shifter without a level shift or inverter circuit.

14. (Original) The method of claim 13 wherein the one phase signal is the quadrature phase signal.

15. (Original) The method of claim 13 wherein the phase shifting is by ninety degrees in phase.

16. (New) The apparatus of claim 1 wherein each of the delay cells comprises gates of two serially connected MOSFETs used for bias and frequency control of that delay cell, gates of two MOSFETs used for an input of that delay cell and drains of two MOSFETs forming the output of the delay cell, the output of the delay cell is delayed by forty-five degrees from the input of the delay cell.

17. (New) The receiver of claim 7 wherein each of the delay cells comprises gates of two serially connected MOSFETs used for bias and frequency control of that delay cell, gates of two MOSFETs used for an input of that delay cell and drains of two MOSFETs forming the output of the delay cell, the output of the delay cell is delayed by forty-five degrees from the input of the delay cell.

18. (New) The method of claim 13 wherein each of the delay cells comprises gates of two serially connected MOSFETs used for bias and frequency control of that delay cell, gates of two MOSFETs used for an input of that delay cell and drains of two MOSFETs forming the output of the delay cell, the output of the delay cell is delayed by forty-five degrees from the input of the delay cell.